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WHAT IS INTROSPECTION?

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Several influences have contributed to make a wide gap between objective method and introspection. The connotation of the terms themselves has widened the gap, one suggesting externality, the other internality. The gap has also been widened by the association of one of the terms with the natural sciences or the study of matter, of the other with psychology or the study of mind, so that the time-worn contrast of matter and mind spreads to the methods by which each is supposed to be studied. But most of all the gap has been widened by the working hypothesis of parallelism. Parallelism is only a working hypothesis. Once a year at least every psychologist delivers a lecture pointing out that fact. Yet the more the psychologist asserts that parallelism is but a working hypothesis, the more he believes in his heart that it is fundamental truth. The hypothesis has operated like a hypnotic spell to separate introspection from objective method.

The Greeks did not have that distinction. One looks in vain through Plato for what appears so clear to us. There is a distinction there between knowledge and opinion, but that is not our distinction. We sometimes meet a vulgar layman today who is slow to understand what the difference is between introspection and objective observation. We have set these blindnesses down to ignorance. But what if we be seeing double!

It is not my opinion that we are positively seeing double. There are two objects. Objective method and introspection are different, but not incomparably different. They are two extremes of a single scale. The difference between them is merely one of degree. The reason this distinction was not observed by Plato is that the natural sciences had not progressed far enough in his day to bring to maturity what we now know as objective method. The only method Plato knew was introspection. And since he knew only one method, obviously he could not observe a distinction of methods. The distinction between introspection and objective method did not become prominent until after the natural sciences had made considerable progress. In Descartes we see the beginning of the distinction. In Berkeley and Locke we see it definitive. But those were the times following the prodigious growth of physics and astronomy under Galileo, Copernicus, and Newton. In the hands of these scientists the objective method developed out of introspection. And the philosophers who followed these scientists registered and defined the distinction. The old method, therefore, is introspection. Objective method is a new discovery. To it largely we owe the astonishing advances in science during the last three centuries.

The point I wish to emphasize in this article is the absence of any qualitative difference between objective method and introspection. As a means of approaching the subject, I shall take an analysis of introspection furnished by Titchener in a series of articles which appeared

in the *American Journal of Psychology* in 1912.¹ From a criticism of this analysis and the addition of a few further remarks, the point I have in mind I think will make itself evident.

There are three parts, says Titchener, in scientific introspection,—a process, an apperception, and a description. According to the temporal arrangement of these parts,—i. e., according to the way memory enters into the introspection,—three arrangements of these parts are possible. Thus there are three kinds of introspection:

1. In the first kind, "process and apperception occur together. Description is made on the basis of present immediacy.

2. In the second, "process and apperception occur together. Description is made on the basis of remembered apperception."

3. In the third, "process is recalled as memory-image. Apperception is of memory-image and description is on the basis of this apperception."²

Allowing *p* to stand for process, *a* for apperception, and *d* for description; a prime (') over any one of these letters to stand for the recollection of the part designated by that letter; and a parenthesis to stand for a single span of consciousness; we may express the three kinds of introspection graphically as follows:

1. (*pad*) — ()
2. (*pa*) — (*a'd*)
3. (*p*) — (*p'ad*)

The meaning Titchener attaches to process, apperception, and description may be gathered from the following paragraph:

"The essential thing in every case of introspection . . . is that some conscious process or part process, some state of consciousness or complex of states of consciousness, is made the object of a 'conscious psychological apperception.' This apperception is an appraisement, a judgment, a 'placing' from the psychological standpoint, of the state or process which is to be observed. It may be explicit, consisting of a 'properly formulated sentence in internal speech,' to which may even be added an inner comment such as 'important!' or 'don't forget!' Or again it may be sketchy and fleeting and make but little claim upon consciousness,—consisting perhaps of a bare suggestion, of verbal glosses, visual ideas, and so forth. The method is completed by a description which gives the apperception or appraisement 'a linguistic expression in accordance with instructions'."³

For the time being we shall make no comments on the "process" *p*.

Let us see, however, if we are quite sure what Titchener means by "apperception" *a*. It is a term with a very dangerous connotation, suggesting too prominently awareness. Now, there is a pretty wide agreement among psychologists at the present day that awareness is not to be found in introspection. There has even been a disposition in a certain recent philosophical school to deny the existence of awareness altogether. But whether there be awareness or not, it is assuredly not an object of consciousness. If there be awareness, it must be a thing inferred, for nobody was ever aware of awareness.

¹ E. B. Titchener, *Prolegomena to a Study of Introspection*, *Am. Journ. Psych.*, XXIII., 1912, 427-448; The Schema of Introspection, *Am. Journ. Psych.*, XXIII., 1912, 485-500.

² The Schema of Introspection, p. 491.

³ *op. cit.*, p. 491.

It would, therefore be impossible to remember awareness. If, then, Titchener intends "apperception" to be in any respect equivalent to awareness, it becomes immediately impossible that "apperception" should be recalled,—a fact that would strike out as invalid the second type of introspection. Also it is very difficult to see how an "apperception" could constitute a link between a process and a description if "apperception" is made equivalent to awareness and therefore is not to be thought of as an object of consciousness. On this score, all three kinds of introspection would become invalid, provided my symbolism were retained,—a symbolism which indicates a temporal sequence of the three parts of introspection.

But of course the symbolism is mine and not Titchener's, and it may not fully inclose his meaning. Indeed, I do not think it does, for Titchener's meaning seems to be ambiguous, and it is impossible to express an ambiguous statement in a single formula. In the opening sentence of the passage quoted above, Titchener speaks of a process that "is made the object of 'a conscious psychological apperception'." Obviously, if a process is the object of an "apperception," the "apperception" must be coincident with the process. At once my symbolism breaks down. But in the next sentence Titchener says that this "apperception" is "an appraisement, a judging, a 'placing,'" which consists of a "properly formulated sentence in internal speech" or "of bare suggestion, of verbal glosses, visual ideas, and so forth." This meaning of "apperception" is something very different. It is description or suggested description and cannot be contemporary with the process but must be subsequent. And for this meaning of "apperception" my symbolism is perfectly correct.

Which of these meanings shall we accept? Is "apperception" to be regarded as awareness or as description? It cannot be awareness. Titchener's analysis is supposed to be an introspective analysis of introspection. But as we saw, one cannot introspect on awareness, and no one is more insistent on that point than Titchener himself.⁴ It must be description, then, that Titchener means by apperception.

But now the question arises, how shall we distinguish the description that is identified with apperception from the description which Titchener puts down as the third part of the act of introspection?

The only distinction it seems possible to make is that between a partial and a complete description. In order that an introspection should be of any value to a psychologist, he must be able to compare it with other introspections. But the only way to compare introspections is to compare descriptions of them. Descriptions of introspections, however, cannot be compared unless the words used in the descriptions agree specifically in their denotations. "Cold" must mean a particular sensory experience in every psychological introspection, otherwise there is no telling what the description describes. If one subject means by "cold" what another subject means by "cool," absolutely contradictory descriptions may result. Accordingly there has developed a more or less standardized psychological vocabulary, and a description is not complete until it has been stated in terms of that standard vocabulary.⁵ It is description in such terms, I take it, that

⁴ E. B. Titchener, *Text-book of Psychology*, 1913, 17-18.

⁵ Cf. E. G. Boring, Introspection in Dementia Precox, *Am. Jour. Psych.*, XXIV., 1913, 145ff., for a detailed account of the nature of a "complete description," and methods used to obtain it. Cf. also Titchener, Description vs. Statement of Meaning, *Am. Jour. Psych.*, XXIV., 1912, 165-182.

Titchener means by description as the third part of the introspective operation. For "a linguistic expression in accordance with instructions" would obviously be in terms of the standard psychological vocabulary if the person who gave the instructions were a psychologist. A description in terms of the standard psychological vocabulary is therefore a complete description, and any other description is only partial.

The function of the partial description is to act as a bridge between the process and the complete description when the complete description does not immediately follow the process. The subject translates a partial description which he recalls into the standard vocabulary, and the result is a complete description. Where a complete description is made directly from the process, no partial description enters in; or in other words, whenever there is a partial description, memory has been employed,—a fact which illustrates again how Titchener was confused by his "apperception." For in the first type of introspection,—viz., (*pad*) — () —memory was not supposed to enter at all: the description was supposed to be "made on the basis of present immediacy"; yet he inserts an "apperception" in the operation. Obviously all immediacy would be dissolved by that insertion. The same confusion is seen again in the second span of the third type of introspection.

Bearing these numerous criticisms in mind, we can now reformulate Titchener's three types of introspection, and present them in the following shape (I shall let a bracketed *d* stand for partial description):

1. (*pd*) — ()
2. (*p* [*d*]) — ([*d*] '*d*')
3. (*p*) — (*p*' *d*)

An examination of these three types of introspection shows that the first type is the model type,—viz., (*pd*). What is desired is a complete description of a process. Each type begins with a process and ends with a complete description of the process. The intermediaries,—recalled processes and partial descriptions,—are incidental and are lost sight of as soon as the introspection is over; their part in the operation is simply to carry one from the process to the complete description, when the complete description does not immediately follow the process. Process and complete description are the only two essential elements in any type of introspection. Hence (*pd*) is the model of introspection.

Now, what is the peculiar character of (*pd*) which makes introspection so different from observation in the objective sciences? It certainly does not reside in the description, *d*. Every scientist must conclude his observations by a complete description of exactly the same nature as the complete introspective description, a description in terms of the standardized scientific vocabulary in which every word has a strict and specific denotation. It is the same in this respect with physicist, chemist, or biologist as with psychologist. It is not therefore the description that gives introspection its unique quality. It must, then, be the process. In other words, introspection must differ from objective observation only in the kind of data studied.

Some psychologists enlarge at great length on the absolute contrast discoverable between objective and introspective data, and write out a long list of opposed characteristics. But on the whole the list may be reduced to three. First, objective data are spatial; introspective data are not spatial. Secondly, objective data are measurable; introspective data are not measurable. Thirdly, objective data are indirectly known through the mediation of the senses; introspective data are immediately known.

This is a formidable list of opposites and a most plausible one, but it cannot stand the lightest touch of analysis. Introspective data are not spatial, it is said, yet extent is an attribute of all visual sensations. Introspective data are not measurable, it is said, yet we introspect on the relative intensities of sensations, on the relative sizes of visual sensations, etc. Introspective data alone are immediately known, it is said; other data are known through the mediation of the senses. There is a curious misconception here, as though a physicist's, a chemist's, or a biologist's sensations were not just as good as a psychologist's. What the psychologists have in mind is the objective scientist's construction of a universe of objects and organisms with the accompanying theory that sensations are due to certain modifications occurring within the organisms. But the data for constructing this universe of objects and nervous organisms are sensations, the identical sensations which the psychologist himself has. Surely the visual sensations of a physicist are no different from the visual sensations of a psychologist, even though the physicist uses his sensations to discover the number of ether waves in a certain color, while the psychologist uses his for some other purpose. The physicist's sensation, blue, which becomes a datum of physics, is no different from the psychologist's sensation, blue, which becomes a datum of psychology.

What, then, is the difference between introspective and objective data? It is not that introspective data necessarily lack the spatial attribute, or are not measurable, or are immediate as contrasted with objective data which are mediate. All of these supposed differences are fictitious. The real difference is simply this, that objective data are picked, whereas introspective data are anything that comes along. The rare data are not the introspective data, as generally imagined; any data are introspective. Anything seen, heard, felt, enjoyed, or in any way experienced is fair game for introspection. The rare data are the objective data.

But how is this? How can data be picked? Must not a science take what it can get? These questions cannot be answered here. I must simply repeat that the sciences which employ the objective method do pick their data. And it is just this fussiness which distinguishes the objective method from the introspective.

There is a regular law that can be traced through the objective sciences governing the choice of data. Starting with the whole mass of experience, we find that the objective sciences make their first selection against the interoceptive and proprioceptive experiences. Pullings, vertigos, hungers, pleasures, pains, fancies, and imaginings are not recognized data in any objective science. In other words, kinaesthetic and organic sensations, feelings, emotions, and cognitions are all ruled out of the sphere of objective method. The remaining types of experience are acceptable in the more undeveloped objective sciences,—i. e., visual, auditory, tactual, olfactory, and gustatory sensations are acceptable objective data. In a thoroughly developed objective science, however, nothing is acceptable but visual data. In short an objective method is one which limits its choice of data to experiences derived from the exteroceptive sense organs, and in refined objective method the data are further limited to experiences derived only from vision.⁶

⁶ For a more extended analysis of this selective process in the objective sciences cf. S. C. Pepper, *The Nature of Scientific Matter*, *Jour. of Phil., Psych., and Sc. Meth.*, 1917, XIV., 483-491.

Think of any important experiment in such refined objective sciences as physics, chemistry, or biology, and then list the data employed in determining its results. They will be found to be mainly, if not entirely, visual. Take, for example, the experiment for Boyle's Law. This is the law that at constant temperatures the product of the volume of a gas by the pressure exerted upon it is always the same. Now turning to our stock of senses and choosing those apparently best adapted to obtain the data needed in the experiment, we should say off-hand that the temperature would be in terms of our cold and warm sensations, that pressure would be in terms of our pressure sensations, and volume in terms of our articular sensations. But what do we find? Not one of these kinds of sensations is mentioned. Temperature is in terms of visual degrees marked off on a thermometer. Pressure is in terms of certain visual degrees marked off on a U-shaped tube partly filled with mercury. Volume is in terms of certain other visual degrees marked off on the same U-shaped tube. All the data are visual. And this case is typical.

To return, now, to the distinction between the introspective and the objective methods. We found that in their abstract form they are exactly similar. Both consist of a process and a scientific description of that process. The distinction between these two methods must, therefore, be a distinction either in the kind of process or in the kind of scientific description employed. We saw that so far as scientific description is concerned no difference could be discovered. One scientific description is exactly like another. The descriptions in physics are just like those in introspective psychology. The distinction between the objective and introspective methods must, therefore, reside in the process described. And that is exactly what we find.

The introspective method will accept any kind of experiences whatsoever as fit material for its process, as fit data to be described. The objective method will accept only sensations derived from the exteroceptive sense organs, and prefers to accept only sensations derived from vision. Introspective method is democratic and recognizes no innate fitness of data. Objective method is aristocratic and insists on the natural superiority of vision. Herein lies the whole distinction between the introspective and the objective methods. They both have the form (pd). The difference between them is that in introspection p = any experience whatsoever; while in objective method p = sensations derived from the exteroceptive sense organs and ultimately sensations derived only from vision.